① Solve for x

ⓐ $-4x + 1 = 6$
$\quad -1 \quad -1$
$= -4x = 5$
$5 \div -4 = -1.25$

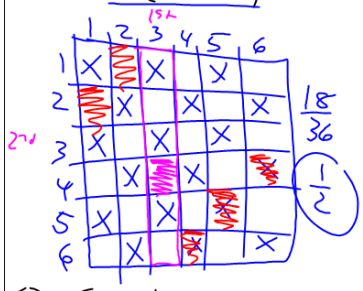
ⓑ $\frac{2 + 4(x-5)}{4} = 9$

x
-5
$\cdot 4$
$+2$
$\div 4$
$= 9$

$9 \cdot 4 = 36$
-2
34
$\div 4$
8.5
$+5$
13.5

② If 2 six-sided dice are rolled, find each probability

ⓐ P(even sum)



ⓑ P(1st a 3 then a 4) $= \frac{1}{36}$

ⓒ P(sum of 3 or 10) $= \frac{5}{36}$

③ Find the slope of the line between the two points

ⓐ (1, 4)(3, 10)
$x_1, y_1 \quad x_2, y_2$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

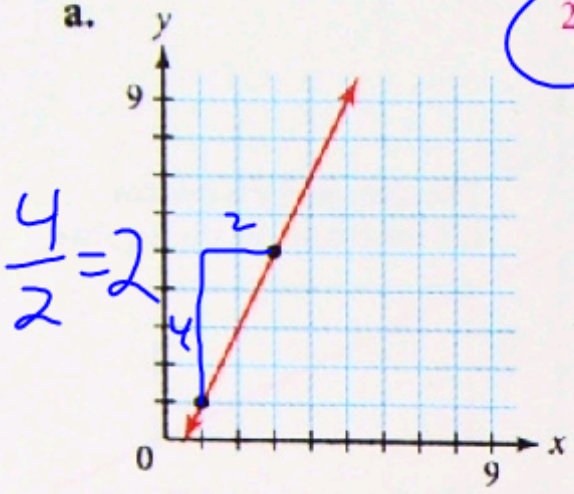
$\frac{10-4}{3-1} = \frac{6}{2} = 3$

ⓑ (-1, 0)(4, 3)
$x_1, y_1 \quad x_2, y_2$

$m = \frac{3-0}{4-(-1)} = \frac{3}{5} \approx 0.6$

1. Find the slope of each line using a slope triangle or the slope formula.

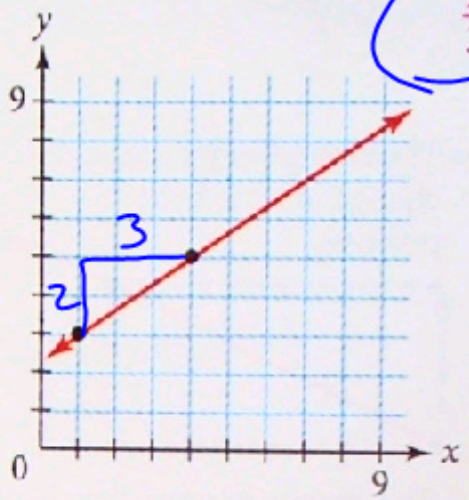
a.



2

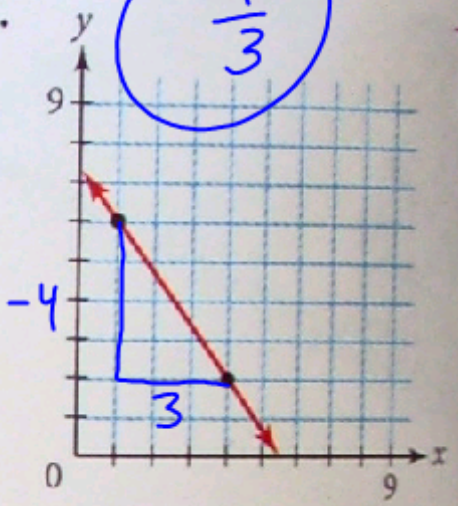
$\frac{4}{2} = 2$

b.



$\frac{2}{3}$

c.



$\frac{-4}{3}$

$\frac{4}{3}$

2. Find the slope of the line through each pair of points. Then name another point on the same line.

a. (2, 4), (4, 7) 1.5

b. (6, −1), (2, 5) -1.5

c. (−2, 4), (8, 4) 0

d. (1, −3), (9, 12) 1.875

3. Given the slope of a line and one point on the line, name *two* other points on the same line. Then use the slope formula to check that the slope between each of the two new points and the given point is the same as the given slope. **Possible answers:**

a. Slope $\frac{3}{1}$; point (0, 4) (1, 7), (−1, 1)

b. Slope −5; point (2, 8) (3, 3), (1, 13)

c. Slope $-\frac{3}{4}$; point (8, 6) (12, 3), (4, 9)

d. Slope 0.2; point (5, 7) (6, 7.2), (4, 6.8)

Hot-Air Balloon Height

Time (min)	Height (m)
0	14
2.2	80
3.4	116
4	134
4.6	152

Here is some data collected from a hot air ballon.

(a) what is the slope of the line through these points? 30

(b) What are the units and the real-world meaning of the slope? meters + min

(c) Write a linear equation to model the data.

(d) What is the height after 8 min? 254 m

(e) When is the ballon 500m high?

(0, 14) (2.2, 80) $\frac{80-14}{2.2-0} = 30$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

(b) The ballon rises 30 meters per min

(c) $y = mx + b$ (height, time, rate slope, y-int x=0 start)

$y = 30x + 14$

(d) $y = 30(8) + 14$

(e) $500 = 30(x) + 14$

$-14 \quad -14$

$\frac{486}{30} = \frac{30x}{30}$

16.2 min

Each table gives the coordinates of four points on a different line.

i.

x	y
4	−8
4	0
4	3
4	20

x_1, y_1

x_2, y_2

$m = \frac{0 - -8}{4 - 4}$

$m = \frac{8}{0}$

m = undef. vert.

ii.

x	y
0	5
1	3
3	−1
4	−3

$m = \frac{3 - 5}{1 - 0}$

$m = -2$

iii.

x	y
−4	−5
−3	−5
1	−5
4	−5

$m = \frac{-5 - -5}{-3 - -4}$

$m = \frac{0}{1}$

m = 0 horz.

iv.

x	y
−4	−5
−2	−3.5
0	−2
4	1

$m = \frac{-3.5 - -5}{-2 - -4}$

$m = 0.75$

a. Without calculating, can you tell whether the slope of the line through each set of points is positive, negative, zero, or undefined? Explain how you can tell.

b. Choose two points from each table and calculate the slope. Check that your answer is correct by calculating the slope with a different pair of points.

c. Write an equation for each table of values.

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$y = mx + b$

m: slope

b: y-int (x = 0)

i) $x = 4$ (vertical)

ii) $y = -2x + 5$

iii) $y = -5$

iv) $y = 0.75x - 2$

Ticket out the door

① Find the slope (2, -3) (5, 6)

② write an equation for the table

x	y
2	7
5	13
8	19

Homework

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